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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/539,739

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Joel Choisnet

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5896

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7590

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EXAMINER

RALIS, STEPHEN J

ART UNIT

PAPER NUMBER

3742

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DELIVERY MODE

03/04/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/539,739	<b>Applicant(s)</b> CHOISNET, JOEL	
	<b>Examiner</b> STEPHEN J. RALIS	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2005 and 11 April 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Applicant is respectfully requested to provide a location within the disclosure to support any further amendments to the claims due to when filing an amendment an applicant should show support in the original disclosure for new or amended claims. See MPEP § 714.02 and § 2163.06 ("Applicant should specifically point out the support for any amendments made to the disclosure.").

***Continued Examination Under 37 CFR 1.114***

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10 December 2008 has been entered.

***Response to Arguments***

4. Applicant's arguments filed 10 December 2008 have been fully considered but they are not persuasive as set forth below.
5. To the degree it can be argued that Hancock et al. and Prager do not disclose "the switching time is a time necessary for the switch to transition from one state to assume another" and "the control means define a switching time that is *variably*

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*prolonged* as compared to a normal switching time of the electronic switch taken in isolation", the additional rejection in view of Frus et al. (U.S. Patent No. 5,754,011) is provided as set forth below:

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4, 6 and 7 recite the limitation "a switching time" in line 2. It is unclear and uncertain to the examiner to whether the "a switching time" in claims 4, 6 and 7 is the same or different from the "a switching time" recited to the preceding claim 1. Further clarification is required to either further differentiate the "a switching time" or make the recited instances equivalent.

Claim 1 recites the limitation "the control means..." in line 8; Claim 2 recites the limitation "wherein the control means" in line 2; Claims 4-10 recites the limitation "the control means..." in line 1. There is insufficient antecedent basis for these limitations in the claims. Furthermore, it is unclear and uncertain to whether "the control means" is the "means for controlling the electronic switch" or "means for controlling a switching time of the electronic switch" as recited in claim 1. Further clarification is required.

In general, the claims are replete with such 35 U.S.C. 112, second paragraph issues. The above notes are exemplary with respect to all of the 35 U.S.C. 112, second paragraph rejections present in the instant case, all claims must be carefully reviewed and appropriate corrections should be made in response to this rejection.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-3 and 5-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Hancock et al. (U.S. Patent No. 5,847,367).

Hancock et al. disclose a device for regulating the temperature of a heating wire (see Figure 1), the device comprising: an electronic switch (switching means 2; column 3, lines 59-62) connected in series with the heating wire (heating element 3) (see Figure 1), means for controlling the electronic switch (switching means 2) (column 3, line 55 – column 7, line 32; see Figure 1), wherein the device also comprises means for

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controlling a switching time (column 6, line 13 – column 7, line 32; see Figure 1) of the electronic switch (switching means 2) and wherein the control means for controlling a switching time (column 6, line 13 – column 7, line 32; see Figure 1) of the electronic switch (switching means 2) (see Figure 1) the switching time is a time necessary for the switch to transition from one state to assume another to control the voltage across the terminals of the switch (switching means 2) as a function of a setpoint voltage (scaling circuit 8 comprising resistor 8a and variable resistor 8b) defining the switching time (Abstract; control circuit 10; column 3, line 55 – column 7, line 32; see Figure 1).

With respect to the limitation "the control means for controlling a switching time of the electronic switch wherein the switching time is a time necessary for the switch to transition from one state to assume another", Hancock et al. explicitly the electronic switch (switching means 2) being controlled via the switch control (10) based on information provided to the switch control (10). The switch control (10) controlling the electronic switch (switching means 2) would have to control the switching time of the electronic switch (switching means 2) to transition between one state to another for the electronic switch (switching means 2) to switch between a conducting and non conducting state or the system would not function accordingly. Therefore, Hancock et al. fully meets "the control means for controlling a switching time of the electronic switch wherein the switching time is a time necessary for the switch to transition from one state to assume another" given its broadest reasonable interpretation.

With respect to the limitations of claim 2, Hancock et al. disclose means (comparator 9) for measuring the temperature of the heating wire (Abstract), wherein

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the control means turn the electronic switch (switching means 2) on and off as a function of the temperature of the heating wire (heating element 3) (Abstract; column 3, line 55 – column 7, line 32; see Figure 1).

With respect to the limitations of claim 3, Hancock et al. disclose the means for measuring the temperature of the heating wire (heating element 3) comprise means for (comparator 9) comparing the voltage present at the common point between the electronic switch (switching means 2) and the heating wire (heating element 3) with a reference voltage (input from scaling circuit 8 comprising resistor 8a and variable resistor 8b) (Abstract).

With respect to the limitation of the voltage present at the common point between the electronic switch and the heating wire, Hancock et al. disclose a series circuit loop comprising a switching means (2), current sensor (7), resistor (8a), variable resistor (8b) and heating element (3) with a common point designated between electronic switch (switching means 2) and the heating element (3) via the series loop with the current sensor (7), resistor (8a), variable resistor (8b) also between the electronic switch (switching means 2) and the heating element (3). Therefore, Hancock et al. fully meets “the voltage present at the common point between the electronic switch and the heating wire” given its broadest reasonable interpretation.

With respect to the limitations of claims 6 and 7, Hancock et al. disclose the output of latch (17) being connected to the input (10a) of the switch control circuit (10) which is connected to the switch (2). Hancock et al. further disclose when the latch (17) is in an "ON" state the switch (2) consequently is "ON" and current flows through the

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heating element (3) (column 6, line 30 -column 7, line 32). The switch (2) would have a shorter frequency switching time when taken in isolation compared to that of the logic truth table disclosed in column 6, lines 40-45. Therefore, Hancock et al. fully meets “the control means define a switching time that is longer than the normal switching time of the electronic switch taken in isolation” given its broadest reasonable interpretation.

With respect to the limitations of claim 5 and 8-10, Hancock et al. disclose the control means (see Figure 1) comprising an operational amplifier (comparator 9) having a first input (12) being connected to the common point (between switch 2 and current sensor 7) of the heating wire (heating element 3) and of the electronic switch (switching means 2), and in addition, a second input (11) receiving the setpoint voltage (scaling circuit 8 comprising resistor 8a and variable resistor 8b) with the output (13) controlling, in part, the turning-on and the turning-off of the electronic switch (switching means 2). Therefore, Hancock et al. fully meets “the control means comprise an operational amplifier, whereof a first input is connected to the common point of the heating wire and of the electronic switch, whereof a second input receives the setpoint voltage and whereof the output controls the turning-on and the turning-off of the electronic switch” given its broadest reasonable interpretation.

10. Claims 1, 4, 5 and 10 are rejected under 35 U.S.C. 102(a) and (e) as being anticipated by Prager (U.S. Publication No. 2002/0130123).

Prager discloses a device for regulating the temperature of a heating wire (Title), the device comprising: an electronic switch (internal power switch 6/thermostatic switch



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7) connected in series with the heating wire (heating element 10) (see Figure 2), means for controlling the electronic switch (electronic assembly 1'; see Figure 2), wherein the device also comprises means for controlling a switching time (control unit 40) (page 3, paragraph 3; page 3, paragraph 33) of the electronic switch (internal power switch 6/thermostatic switch 7) and wherein the control means (control unit 40) for controlling a switching time (control unit 40) (page 3, paragraph 3; page 3, paragraph 33) of the electronic switch wherein the switching time is a time necessary for the switch to transition from one state to assume another to control the voltage across the terminals of the switch (internal power switch 6/thermostatic switch 7) as a function of a setpoint voltage defining the switching time (Abstract).

With respect to the limitation "the control means for controlling a switching time of the electronic switch wherein the switching time is a time necessary for the switch to transition from one state to assume another", Prager explicitly the electronic switch (internal power switch 6/thermostatic switch 7) being controlled via the switch control (control unit 40) based on information provided to the switch control (control unit 40). The switch control (control unit 40) controlling the electronic switch (internal power switch 6/thermostatic switch 7) would have to control the switching time of the electronic switch (internal power switch 6/thermostatic switch 7) to transition between one state to another for the electronic switch (internal power switch 6/thermostatic switch 7) to switch between a conducting and non conducting state or the system would not function accordingly. Therefore, Hancock et al. fully meets "the control means for controlling a switching time of the electronic switch wherein the switching time is a time necessary for

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the switch to transition from one state to assume another” given its broadest reasonable interpretation.

With respect to the limitations of claim 4, Prager discloses the control means (control unit 40) defining a switching time that is longer than the normal switching time of the electronic switch (internal power switch 6) taken in isolation (delay times; page 3, paragraphs 33-34). The switch (internal power switch 6) would have a shorter frequency switching time when taken in isolation compared to that of the delay times disclosed by Prager. Therefore, Prager fully meets “the control means define a switching time that is variably prolonged as compared to a normal switching time of the electronic switch taken in isolation” given its broadest reasonable interpretation.

With respect to the limitation of claims 5 and 10, Prager discloses the amplifier (50) may be a comparator (page 3, paragraph 35) and furthermore the device including means for supplying a voltage drop arising at the measuring resistance as an input signal to the control unit (40) for evaluation of the input signal (Abstract). Prager discloses a amplifier (50) being utilized as a comparator with an output being the voltage drop when the heating element is in use. The voltage drop would have to be the difference between a reference voltage and the voltage being current used by the heating element in order for a comparator to produce such an output signal. Therefore, Prager fully meets “the control means comprise an operational amplifier, whereof a first input is connected to the common point of the heating wire and of the electronic switch, whereof a second input receives the setpoint voltage and whereof the output controls the

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turning-on and the turning-off of the electronic switch” given its broadest reasonable interpretation.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 2, 3 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prager (U.S. Publication No. 2002/0130123).

Prager discloses all of the limitations of the claimed invention, as previously set forth, except for means for measuring the temperature of the heating wire, wherein the control means turn the electronic switch on and off as a function of the temperature of the heating wire; and the means for measuring the temperature of the heating wire comprising means for comparing the voltage present at the common point between the electronic switch and the heating wire with a reference voltage.

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Prager teaches the control unit (40) has the function of signaling the current flow through the heating element (10). However, Prager further teaches the control unit (40) can also, *alternatively, or in addition to, indicate any present heating conditions and/or other present conditions which are derivable from the simple event whether or not a current flow is detected at all and/or derivable from the value of the current sensed by the voltage drop and/or derivable from the duration of periods of current flow and non-current flow* (page 3, paragraph 31-32). Prager further teach temperature setting switches such as thermostatic switch (7) may be self-resetting temperature switches and may be in series or in parallel with the internal power switch (6) (page 4, paragraph 41). To provide a means for measuring the temperature of the heating wire, wherein the control means turn the electronic switch on and off as a function of the temperature of the heating wire would have been a mere engineering expediency as Prager clearly teaches the ability to determine present heating conditions by the sensed voltage drop as well as the use of thermostatic switches in use being under the same control means.

With respect to claims 6-9, see rejections of claims 4, 5 and 10 above over Prager.

14. To the degree it can be argued that Hancock et al. and Prager do not disclose “the switching time is a time necessary for the switch to transition from one state to assume another” and “the control means define a switching time that is *variably prolonged* as compared to a normal switching time of the electronic switch taken in

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isolation", the additional rejection in view of Frus et al. (U.S. Patent No. 5,754,011) is provided as set forth below:

15. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hancock et al. (U.S. Patent No. 5,847,367) in view of Frus et al. (U.S. Patent No. 5,754,011).

Hancock et al. disclose a device for regulating the temperature of a heating wire (see Figure 1), the device comprising: an electronic switch (switching means 2; column 3, lines 59-62) connected in series with the heating wire (heating element 3) (see Figure 1), means for controlling the electronic switch (switching means 2) (column 3, line 55 – column 7, line 32; see Figure 1), wherein the device also comprises means for controlling a switching time (column 6, line 13 – column 7, line 32; see Figure 1) of the electronic switch (switching means 2) and wherein the control means for controlling a switching time (column 6, line 13 – column 7, line 32; see Figure 1) of the electronic switch (switching means 2) (see Figure 1) to control the voltage across the terminals of the switch (switching means 2) as a function of a setpoint voltage (scaling circuit 8 comprising resistor 8a and variable resistor 8b) defining the switching time (Abstract; control circuit 10; column 3, line 55 – column 7, line 32; see Figure 1).

With respect to the limitations of claim 2, Hancock et al. disclose means (comparator 9) for measuring the temperature of the heating wire (Abstract), wherein the control means turn the electronic switch (switching means 2) on and off as a

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function of the temperature of the heating wire (heating element 3) (Abstract; column 3, line 55 – column 7, line 32; see Figure 1).

With respect to the limitations of claim 3, Hancock et al. disclose the means for measuring the temperature of the heating wire (heating element 3) comprise means for (comparator 9) comparing the voltage present at the common point between the electronic switch (switching means 2) and the heating wire (heating element 3) with a reference voltage (input from scaling circuit 8 comprising resistor 8a and variable resistor 8b) (Abstract).

With respect to the limitation of the voltage present at the common point between the electronic switch and the heating wire, Hancock et al. disclose a series circuit loop comprising a switching means (2), current sensor (7), resistor (8a), variable resistor (8b) and heating element (3) with a common point designated between electronic switch (switching means 2) and the heating element (3) via the series loop with the current sensor (7), resistor (8a), variable resistor (8b) also between the electronic switch (switching means 2) and the heating element (3). Therefore, Hancock et al. fully meets “the voltage present at the common point between the electronic switch and the heating wire” given its broadest reasonable interpretation.

With respect to the limitations of claims 6 and 7, Hancock et al. disclose the output of latch (17) being connected to the input (10a) of the switch control circuit (10) which is connected to the switch (2). Hancock et al. further disclose when the latch (17) is in an "ON" state the switch (2) consequently is "ON" and current flows through the heating element (3) (column 6, line 30 -column 7, line 32). The switch (2) would have a

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shorter frequency switching time when taken in isolation compared to that of the logic truth table disclosed in column 6, lines 40-45. Therefore, Hancock et al. fully meets “the control means define a switching time that is longer than the normal switching time of the electronic switch taken in isolation” given its broadest reasonable interpretation.

With respect to the limitations of claim 5 and 8-10, Hancock et al. disclose the control means (see Figure 1) comprising an operational amplifier (comparator 9) having a first input (12) being connected to the common point (between switch 2 and current sensor 7) of the heating wire (heating element 3) and of the electronic switch (switching means 2), and in addition, a second input (11) receiving the setpoint voltage (scaling circuit 8 comprising resistor 8a and variable resistor 8b) with the output (13) controlling, in part, the turning-on and the turning-off of the electronic switch (switching means 2). Therefore, Hancock et al. fully meets “the control means comprise an operational amplifier, whereof a first input is connected to the common point of the heating wire and of the electronic switch, whereof a second input receives the setpoint voltage and whereof the output controls the turning-on and the turning-off of the electronic switch” given its broadest reasonable interpretation.

Hancock et al. discloses all of the limitations of the claimed invention, as previously set forth, except for the control means for controlling a switching time of the electronic switch having the switching time being a time necessary for the switch to transition from one state to assume another; and the control means defining a switching time that is variably prolonged as compared to a normal switching time of the electronic switch taken in isolation.

However, a control means for controlling the switching time of an electronic switch in which the switching time is variably prolonged compared to a normal switching time is known in the art. Frus et al., for example, teach a control means (network 37) holding off the current applied to a switch (32) for a sufficient time to transition from its non-conducting state to its conducting state (column 1, lines 40-45; column 11, lines 7-23). Frus et al. further teach the advantage of such a configuration provides protection of the solid-state switch, thereby increasing the operational longevity of the switching component. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Hancock et al. with the switching delay of Frus et al. in order to provide a means to protect switching components, thereby increasing the operational longevity of the switching component.

16. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prager (U.S. Publication No. 2002/0130123) in view of Frus et al. (U.S. Patent No. 5,754,011).

Prager discloses a device for regulating the temperature of a heating wire (Title), the device comprising: an electronic switch (internal power switch 6/thermostatic switch 7) connected in series with the heating wire (heating element 10) (see Figure 2), means for controlling the electronic switch (electronic assembly 1'; see Figure 2), wherein the device also comprises means for controlling a switching time (control unit 40) (page 3, paragraph 3; page 3, paragraph 33) of the electronic switch (internal power switch 6/thermostatic switch 7) and wherein the control means (control unit 40) for controlling a



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switching time (control unit 40) (page 3, paragraph 3; page 3, paragraph 33) of the electronic switch wherein the switching time is a time necessary for the switch to transition from one state to assume another to control the voltage across the terminals of the switch (internal power switch 6/ thermostatic switch 7) as a function of a setpoint voltage defining the switching time (Abstract).

With respect to the limitation of claims 5 and 10, Prager discloses the amplifier (50) may be a comparator (page 3, paragraph 35) and furthermore the device including means for supplying a voltage drop arising at the measuring resistance as an input signal to the control unit (40) for evaluation of the input signal (Abstract). Prager discloses a amplifier (50) being utilized as a comparator with an output being the voltage drop when the heating element is in use. The voltage drop would have to be the difference between a reference voltage and the voltage being current used by the heating element in order for a comparator to produce such an output signal. Therefore, Prager fully meets "the control means comprise an operational amplifier, whereof a first input is connected to the common point of the heating wire and of the electronic switch, whereof a second input receives the setpoint voltage and whereof the output controls the turning-on and the turning-off of the electronic switch" given its broadest reasonable interpretation.

Prager discloses all of the limitations of the claimed invention, as previously set forth, except for the control means for controlling a switching time of the electronic switch having the switching time being a time necessary for the switch to transition from one state to assume another; the control means defining a switching time that is

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variably prolonged as compared to a normal switching time of the electronic switch taken in isolation; means for measuring the temperature of the heating wire, wherein the control means turns the electronic switch on and off as a function of the temperature of the heating wire; and the means for measuring the temperature of the heating wire comprising means for comparing the voltage present at the common point between the electronic switch and the heating wire with a reference voltage.

However, a control means for controlling the switching time of an electronic switch in which the switching time is variably prolonged compared to a normal switching time is known in the art. Frus et al., for example, teach a control means (network 37) holding off the current applied to a switch (32) for a sufficient time to transition from its non-conducting state to its conducting state (column 1, lines 40-45; column 11, lines 7-23). Frus et al. further teach the advantage of such a configuration provides protection of the solid-state switch, thereby increasing the operational longevity of the switching component. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Hancock et al. with the switching delay of Frus et al. in order to provide a means to protect switching components, thereby increasing the operational longevity of the switching component.

In addition, Prager teaches the control unit (40) having the function of signaling the current flow through the heating element (10). However, Prager further teaches the control unit (40) can also, *alternatively, or in addition to, indicate any present heating conditions and/or other present conditions which are derivable from the simple event whether or not a current flow is detected at all and/or derivable from the value of the*

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*current sensed by the voltage drop and/or derivable from the duration of periods of current flow and non-current flow* (page 3, paragraph 31-32). Prager further teach temperature setting switches such as thermostatic switch (7) may be self-resetting temperature switches and may be in series or in parallel with the internal power switch (6) (page 4, paragraph 41).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Hancock et al. with the switching delay of Frus et al. in order to provide a means to protect switching components, thereby increasing the operational longevity of the switching component. In addition, to provide a means for measuring the temperature of the heating wire, wherein the control means turns the electronic switch on and off as a function of the temperature of the heating wire would have been a mere engineering expediency as Prager clearly teaches the ability to determine present heating conditions by the sensed voltage drop as well as the use of thermostatic switches in use being under the same control means.

With respect to claims 6-9, see rejections of claims 4, 5 and 10 above over Prager.

### ***Remarks***

17. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., controlling switching time so that a finite delay or transition time is created and varied) are not recited in the rejected claim(s). Although the claims are interpreted in

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light of the specification, limitations from the specification are not read into the claims.

See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN J. RALIS whose telephone number is (571)272-6227. The examiner can normally be reached on Monday - Friday, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Examiner, Art Unit 3742

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